



# U.S. INTERNATIONAL CHRISTIAN ACADEMY

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## LESSON PLAN

**Grade/Course: BIOLOGY I 2000310**

**Grade Level: 11<sup>th</sup> High School**

**A)TEXT BOOK: Biology [Hardcover] by Kenneth R. Miller and Joseph Levine (Authors)**

**ISBN-10: 013036701X | ISBN-13: 978-0130367013**

**Order No.: 1**

**Code: BIO2002**

**Class Type: Online**

**Resources:**

Text book  
Teacher works CD  
Teacher interactive  
online  
Links  
Skype-Conference  
Photographs for use in  
teaching

**Length: 1 year**

**Instructional Supports:**

Textbook, Magazines, Journals, Websites  
Links, Conference, Comprehensive Reading  
Plan, PBS Public Television, Discovery  
Channel, History Channel, Biology.com

**Area: Science**

**Credits: 1**

**Total Numbers of class hours: 300 hrs**

**Type: Mandatory**

**Standards:**

Florida Sunshine State  
Standards

**Prerequisite:**

Students must have successfully passed a  
Science class in middle/high school.

## **B) LESSON PLAN Description:**

This one-year course of Biology emphasizes the following topics: The Nature of Life, Cells, Genetics, Microorganism, Plants, Invertebrate, Chordates, and The Human Body.

An introduction to biology with emphasis on the interrelationships of living and nonliving things in ecosystems and how disruptions of these relationships result in environmental problems. .An integrated study of the relationship between the structure and function of the human body. The first half of this yearlong course is focused on the chemical foundations of life, the anatomy and physiology of the cell, and the skeletal, and muscular a nervous systems.

## **C) LESSON PLAN Objectives:**

1. To develop in all students an understanding of Biology
2. List, describe, and give examples of the characteristics of living things.
3. Define and give examples of each of the following terms: cell, tissue, organ, system, organism
4. Biology students will demonstrate the ability to use specific skills and processes, appropriate scientific terminology, and major biological concepts to explain the uniqueness and interdependence of living organisms, their interactions with the environment, and the continuation of life on Earth
5. Distinguish between an observation and an inference when given ascientific statement about an experiment
6. Use the process of scientific reasoning to investigate scientific problems.

## **D) LESSON PLAN Contents**

### **UNIT 1 The Nature of Life (Weeks: 1-4)**

Chapter 1 The Science of Biology

Chapter 2 The Chemistry of Life

### **UNIT 2 Ecology (Weeks: 5-9)**

Chapter 3 The Biosphere

Chapter 4 Ecosystems and Communities

Chapter 5 Populations

Chapter 6 Human in the Biosphere

### **Unit 3 Cells (Weeks: 10-14)**

Chapter 7 Cell Structure and Function

Chapter 8 Photosynthesis

Chapter 9 Cellular Respiration

Chapter 10 Cell Growth and Divisio

**UNIT 4 Genetics (Weeks: 15-20)**

Chapter 11 Introduction to Genetics

Chapter 12 DNA and RNA

Chapter 13 Genetic Engineering

Chapter 14 The Human Genome

**UNIT 5 Evolution (Weeks: 21-26)**

Chapter 15 Darwin's Theory of Evolution

Chapter 16 Evolution of Populations

Chapter 17 The History of Life

Chapter 18 Classification

**UNIT 6 Microorganisms and Fungi (Weeks: 27-30)**

Chapter 19 Bacteria and Viruses

Chapter 20 Protists

Chapter 21 Fungi

**UNIT 7 Plants (Weeks: 31-34)**

Chapter 22 Plant Diversity

Chapter 23 Roots, Stems and Leaves

Chapter 24 Reproduction of Seed Plants

Chapter 25 Plant Responses and Adaptations

**UNIT 8 Invertebrates (Weeks: 35-37)**

Chapter 26 Sponges and Cnidarians

Chapter 27 Worms and Mollusks

Chapter 28 Arthropods and Echinoderms

Chapter 29 Comparing Invertebrates

**UNIT 9 Chordates (Weeks: 38-39)**

Chapter 30 Non-vertebrate Chordates, Fishes, and Amphibians

Chapter 31 Reptiles and Birds

Chapter 32 Mammals

Chapter 33 Comparing Chordates

Chapter 34 Animal Behavior

**UNIT 10 The Human Body (Week: 40)**

Chapter 35 Nervous System

Chapter 36 Skeletal, Muscular, and Systems

Circulatory and Respiratory

Chapter 38 Digestive and Excretory Systems

Chapter 39 Endocrine & Reproductive Systems

Chapter 40 The Immune System and Disease

## **F) LESSON PLAN: Reference, Websites, Journals, Magazines and Book**

1. High School Biology Tutor (High School Tutors Study Guides) Paperback by The Editors of REA (Author)
2. Holt McDougal Biology: Student Edition 2010 [Hardcover] by HOLT MCDUGAL (Author)
3. Homework Helpers: Biology [Paperback] by Matthew Distefano (Author)
4. Biology, 8th Edition [Hardcover] Neil A. Campbell (Author), Jane B. Reece (Author), Lisa A. Urry (Author), Michael L. Cain (Author), Steven A. Wasserman (Author), Peter V. Minorsky (Author), Robert B. Jackson (Author)
5. Biology: Concepts and Connections [Hardcover] by Neil A. Campbell (Author), Jane B. Reece (Author), Martha R. Taylor (Author), Eric J. Simon (Author), Jean L. Dickey (Author)

### **H) Web Reference:**

[www.biologynews.net/links.html](http://www.biologynews.net/links.html)  
<http://labs.mcb.harvard.edu/BioLinks/Evolution.html>  
<http://www.pbs.org/wgbh/evolution/>  
<http://www.ansp.org/>  
[www.butler.edu/biology/facilities-resources/links](http://www.butler.edu/biology/facilities-resources/links)  
[www.biology-online.org](http://www.biology-online.org)  
<http://en.wikipedia.org/wiki/Biology>  
[www.scienceandyou.org/links/biology.shtml](http://www.scienceandyou.org/links/biology.shtml)  
[www.biology.arizona.edu](http://www.biology.arizona.edu)  
[www.educationindex.com/biology](http://www.educationindex.com/biology)  
[www.accessexcellence.org/RC/biology.php](http://www.accessexcellence.org/RC/biology.php)  
[www.biologycorner.com](http://www.biologycorner.com)  
[www.dmac.edu/departments/biology/links.asp](http://www.dmac.edu/departments/biology/links.asp)  
[www.galaxy.com/dir14554/Biology.htm](http://www.galaxy.com/dir14554/Biology.htm)  
[www.biology.org](http://www.biology.org)

### **I. Journals:**

American Scientist  
Journal of Evolutionary Biology  
Journal of Mathematical Biology Table of Contents  
Journal of Theoretical Biology Table of Contents

Molecular and General Genetics (MGG) Table of Contents  
Nature  
Science  
Scientific American  
Systematic Biology  
Biology

**J. Magazines:**

Smithsonian magazine, published by the Smithsonian Museum  
American Scientist magazine  
Discover magazine

**K. Organizations:**

The American Association for the Advancement of Science  
National Association of Biology Teacher (N.A.B.T.)

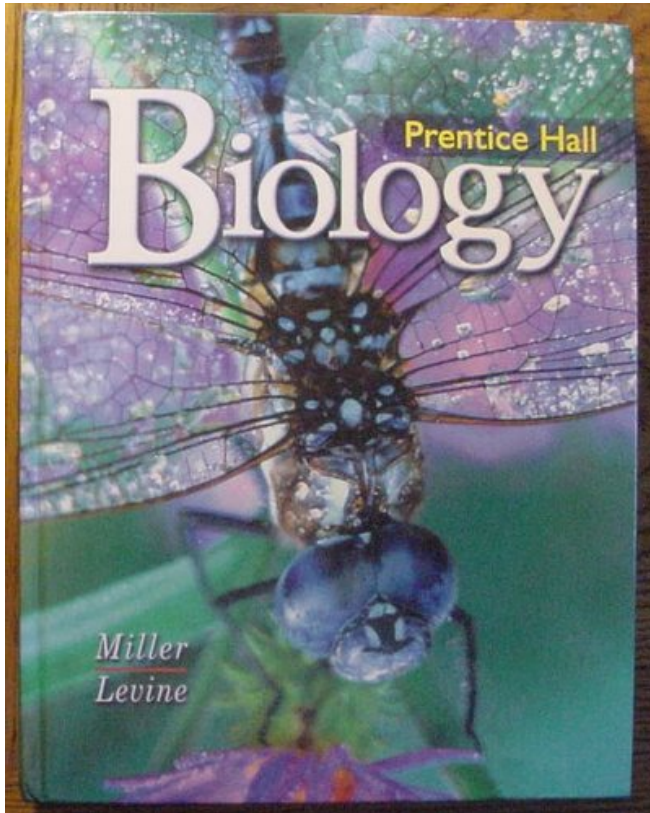
**M. Comprehensive Reading Plan**

Students are required to read at least 1 book or their equivalent during each class as independent reading at-home. Students must also read for 30 minutes at home as part of their daily homework assignment in all subjects. Check your Class Reading Assignment at [www.USICAhs.org/CURRICULUM](http://www.USICAhs.org/CURRICULUM) and check free ebooks at [www.openlibrary.org](http://www.openlibrary.org).

**Text Book Description:**

Publication Date: 2004 | ISBN-10: 013036701X | ISBN-13: 978-0130367013 | Edition: Student  
The most respected and accomplished authorship team in high school biology, Ken Miller and Joe Levine are real scientists and educators who have dedicated their lives to scientific literacy. Their experience, knowledge, and insight guided them in creating this breakaway biology program — one that continues to set the standard for clear, accessible writing.

**BOOK:**



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